City of Sidney
Public Water Supply
PWSID # MT0000330

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SOURCE WATER DELINEATION AND ASSESSMENT REPORT

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INTRODUCTION

This Delineation and Assessment Report was prepared by Jim Stimson, a hydrogeologist with the Source Water Protection Program of the Montana Department of Environmental Quality (DEQ). Sidney public water supply (PWS) is located in Richland County, Montana, about 50 miles northeast of Glendive and about 12 miles from border with North Dakota (Figure 1). The DEQ PWS identification number, operator name, and operator number for the Sidney PWS appear on the title page of this report.

Purpose

This report is intended to meet the technical requirements for the completion of the source water delineation and assessment report for the Sidney PWS as required by the Montana Source Water Protection Program (DEQ, 1999) and the federal Safe Drinking Water Act (SDWA) Amendments of 1996 (P.L. 104-182). The Montana Source Water Protection Program is intended to be a practical and cost-effective approach to the protection of public drinking water supplies from contamination. The primary purpose of this source water delineation and assessment report is to provide information to assist the Sidney PWS operator in the identification of potential contaminant sources near and upstream from the city's wells, and to encourage the development of a source water protection plan to help protect the city's drinking water for the long term.

Delineation and assessment constitute major components of the Montana Source Water Protection Program. Delineation entails mapping the boundaries of source water protection areas, which encompass ground water and/or surface waters contributing to public water supply sources. Assessment involves identifying locations or regions within source water protection areas where contaminants may be generated, stored, transported, or disposed, and determining the relative susceptibility of drinking water to contamination from these sources.

Limitations

This report was prepared to assess threats to the Sidney public water supply and is based on published data including the most recent sanitary survey, and information obtained from local residents familiar with the community. The terms "drinking water supply" and "drinking water source" refer specifically to the sources of Sidney's public water supply, and not any other public or private water supply. Also, not all of the potential or existing sources of groundwater or surface-water contamination in the area of Sidney are identified. Only potential sources of contamination in areas that contribute water to the identified drinking water sources are considered.

The term "contaminant" is used in this report to refer to constituents for which maximum concentration levels (MCLs) have been specified under the national primary drinking water standards, and to certain carcinogenic or toxic constituents that do not have MCLs but are considered to be significant health threats.

CHAPTER 1
BACKGROUND

The Community

Sidney is the county seat of Richland County and is located about 1 to 1 ½ miles west of the Yellowstone River (Figure 1 and Figure 3). State Highway 16 / 200 and the Northern Pacific/Burlington Northern Railroad run through Sidney. The U.S. Census Bureau estimates the 2000 population of Richland County at 10,716 people, 4,829 of whom reside in Sidney. Richland County's population has decreased about 6% and Sidney's, has decreased by about 7.4%, since the 1990 census.

Based on the U.S. Census North American Industry Classification System, revenue-generating industries in the Sidney area include: sales related – 42% (wholesale, retail, manufacturing, banking and real estate), service industry related – 31% (motel-hotel, restaurant, and other), industrial – 20% (mining, construction, and manufacturing), and transportation related – 6%.. The percentages are based on the total number of establishments in the categories listed above for the zip code 59270 (http://censtats.census.gov/cbpnaic/cbpnaic.shtml).

Within the city limits, residents obtain their drinking water from the municipal public water supply. The municipal sewer district services all residents within city limits and some areas outside the city limits. The city is also served by a wastewater treatment plant with multicelled lagoons located about one mile southeast of town. Residents in areas outlying town limits where sewer services are not available utilize on-site septic systems for waste disposal. There are 13 public water supplies in the area of which 6 are community systems and the remaining 7 are non-community (Figure 3). Two of the 10 public water supplies purchase water from Sidney, one uses surface water, and the remainder use groundwater as their source of water (Table 1).

PWSID	Primary Name	Source Type	Resident Pop.	Non-Res Pop.
MT0000330	Sidney, City of	Groundwater	5200	0
MT0000645	Meadow Village Water District	Groundwater	250	0
MT0000514	Richland Co, Valley View WUA	Groundwater	120	0
MT0002583	Sidney Circle Homeowners Association	Groundwater	75	0
MT0001906	The Sunrise Inn	Groundwater	60	0
MT0000644	Mount Pleasant Estates	Groundwater	45	0
MT0001631	M and M Cafe	Groundwater	0	175
MT0002064	The Depot	Groundwater	0	100
MT0002656	Sadies Cafe and Sidney Livestock	Groundwater	0	100
MT0003089	Rau School District #21	Groundwater	0	82
MT0003411	Reynolds Warehouse Grocery	Purchased	0	50
MT0004160	COUNTY MARKET # 201	Purchased	0	30
MT0003326	Montana Dakota Utilities Co	Surface Water	0	25

Table 1. Public Water Supplies in the Sidney area.

Climate

Figure 2. Average Temperatures and Precipitation

Based on Western Regional Climatic Center data for the period of record, annual precipitation averages 14.38 inches. Monthly average precipitation ranges from 0.38 inches in February to 2.76 inches in June. Summer thunderstorms and winter snows provide a majority of the precipitation in the area. The annual mean snowfall in Sidney is 34.58 inches. A summary of the available climatic data for the Sidney area is presented in Table 2 below.

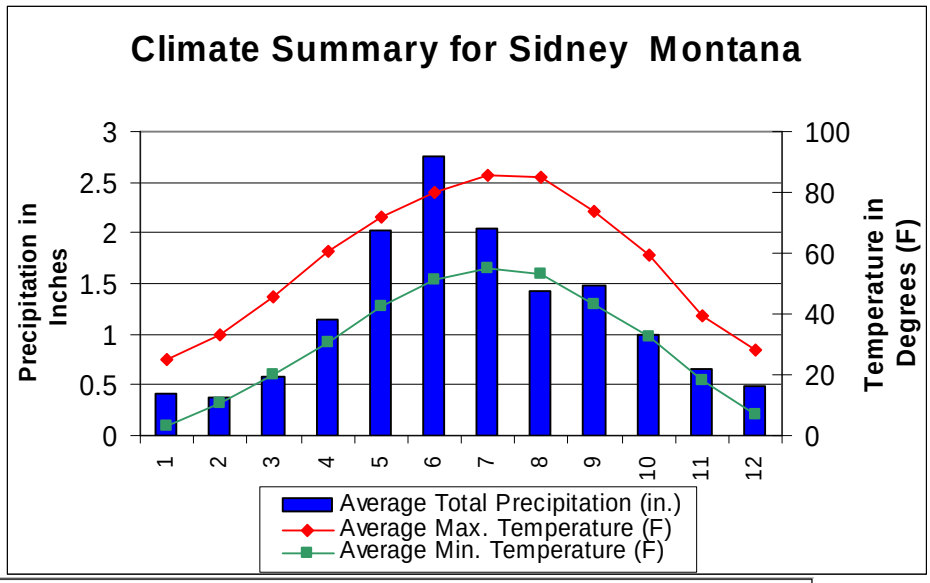

Table 2. Climate Summary.

SIDNEY, MONTANA (247560)

1971-2000 Monthly Climate Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	24.9	33.1	45.8	60.5	72.1	80.1	85.5	84.7	73.5	59.5	39.3	28	57.4
Average Min. Temperature (F)	3.4	10.5	20.3	30.7	42.3	51	54.8	53.1	43.1	32.2	18.2	7.1	30.7
Average Total Precipitation (in.)	0.42	0.38	0.58	1.14	2.02	2.76	2.05	1.42	1.49	1	0.65	0.48	14.38

Western Regional Climate Center, wrcc@dri.edu

Geographic Setting

Sidney is located in the glaciated portion of the Great Plains physiographic province of North America (Rocky Mountain Association of Geologists, 1972). This area is also designated as the glaciated central ground-water region of the United States (Heath, 1984). Early Wisconsin glacial drift and related sedimentary deposits are shown to extend in the Yellowstone Valley south west of Sidney and terminate near the town of Intake (Howard, 1960). The elevation at Sidney is approximately 1,931 feet above mean sea level and the town is located near the Yellowstone River (Figures 1 and 3). The Yellowstone River valley is about 5 miles wide in the vicinity of Sidney. Topographic relief in the area is low with highlands rising about 200 to 400 feet above the river valley. Many of the creeks and tributaries to the Yellowstone have moderately incised channels.

Geology

This section provides an overview of the geology and hydrology of the vicinity of Sidney. Reports used for this section include Reiten (1998), Smith et al. (2000), Slagle et al (1984), Stoner and Lewis, (1980),

Howard, A. D., 1960, Torrey, A. E., and Swenson, F. A., 1951. The geology of the area can be used to determine the locations, boundaries, and hydraulic properties of local aquifers. An understanding of hydrogeologic conditions also provides an explanation for the sensitivity of local aquifers to potential contamination sources. Geology is not just important for understanding the hydrologic conditions related to ground water but it is also valuable for public water supplies that use surface water. For example, the timing and runoff patterns of streams are influenced in part by the geology within a watershed. Watersheds with large areas of low hydraulic conductivity bedrock tend to respond quickly to precipitation and snowmelt events. Hydrographs from streams within such a watershed show numerous high flow peaks or spikes. On the other hand, streams within watersheds underlain by bedrock that has high hydraulic conductivity tend to have more subdued hydrographs, that is, fewer and more rounded high flow peaks. Infiltration of precipitation and snowmelt waters makes the high flow events rise more gradually and have more rounded peaks. Surface water quality can also be affected by the geology within a watershed and information in this section can be useful for gaining a better understanding of factors that control erosion and sedimentation.

Unconsolidated alluvium is present in the Yellowstone River valley and in many of the tributaries to the Yellowstone (Figure 4). The alluvium consists of lenses of unconsolidated clay, sand, and gravel. As much as 100 feet of alluvium is present in the Yellowstone valley and less thick deposits present in some of the tributaries (Smith et al (2001). The Yellowstone River alluvium yields economic quantities of water to wells and in most places represents an unconfined aquifer. Terrace deposits are also present within the main river valley and the tributaries. Some of the terraces are between tens and hundreds of feet above the streams and are considered to be Quaternary age, ranging from Pleistocene to Recent. These terrace deposits consist of gravel, sand, silt, and clay.

Early Wisconsin age glacial drift is present in the Sidney area and extends southwest to a terminus near the town of Intake (Howard, 1960). The drift is composed of till and small deposits of glaciofluvial sediment that are distinct from the stratified drift. Lithology of the drift is distinct from other drift deposits to the north in the Missouri River watershed, with a composition that is lower in carbonate pebbles and clasts, and higher in granitic and foliated metamorphic rocks (Howard, 1960). Maximum thickness of the Early Wisconsin drift is unknown but Howard reports deposits in the range of “several tens of feet” thick. Howard also mapped numerous abandoned channels, lake shore lines, and swales associated with buried channels that are related to the glacial activity in the area. Sedimentary deposits within some of the buried channels are important aquifers in this area.

Bedrock exposed at the land surface in the vicinity of Sidney ranges in age from Upper Cretaceous to Tertiary. Around Sidney the Fort Union Formation dominates the landscape (Figure 4). The Fort Union can be on the order of 1,600 feet thick and can be divided into three members in descending order: the Tullock, Lebo Shale, and Tongue River. There are outcrops of red metamorphosed sedimentary rocks within the Fort Union Formation. These beds are referred to as “clinker” and formed when underlying coal beds were ignited and baked the sandstone, siltstone, and shale beds. In some places the heat was so intense that the overlying rocks were metamorphosed into rock resembling volcanic rocks known as scoria. The Hell Creek Formation (Upper Cretaceous) is below the Fort Union, is up to 900 feet thick, and contains beds of silty shale, mudstone, sandstone, and coal. The Hell Creek is exposed at the land surface to the south of Sidney near Glendive and along the axis of the Cedar Creek Anticline. It is also exposed near the Poplar Dome about 45 miles northwest of Sidney. Generally, the Hell Creek is more fine grained and contains less coal than the overlying Fort Union. Sandstone beds are more abundant in the lower part of the Hell Creek Formation. The Fox Hills Formation and Pierre Shale lie beneath the Hell

Creek and are not exposed at the land surface near Sidney. Sandstone beds of the Fox Hills Formation and the Pierre Shale are found at the land surface along the Cedar Creek Anticline and on the flanks of the Poplar Dome. The upper part of the Fox Hills in known as the Colgate Member and consists of light gray and white sandstone that is fine to medium grained. The Colgate Member is an important aquifer in this region.

The Public Water Supply

The Sidney PWS is classified as a community system under the Federal Safe Drinking Water Act, because the system serves at least 25 year-round residents through at least 15 service connections. The PWS services about 5,200 residents via approximately 1,957 active service connections.

According to the most recent sanitary survey water treatment consists of "green-sand/pressure-sand filtration" system designed to remove iron and manganese with the addition of potassium permanganate. The water is pre-chlorinated to enhance iron and manganese removal. The chlorination system was reported to be "very well maintained and in good condition." Sidney uses two water storage reservoirs with a capacity of about 1,330,000 gallons, about 2 days supply with restricted use. The reservoirs are reported to be well maintained and inspected every three to five years by a contractor and every month by city personnel.

Due to the fact that Sidney obtains its drinking water from a semi-confined alluvial aquifer, the source water is classified as moderately sensitive to contamination, in accordance with Montana Source Water Protection Program criteria (1999), also see Table 3 below.

Table 3. Source water sensitivity criteria (DEQ,

Source Water Sensitivity
High Source Water Sensitivity
Surface water and GWUDISW
Unconsolidated Alluvium (unconfined)
Fluvial-Glacial Gravel
Terrace and Pediment Gravel
Shallow Fractured or Carbonate Bedrock
Moderate Source Water Sensitivity
Semi-consolidated Valley Fill sediments
Unconsolidated Alluvium (semi-confined)
Low Source Water Sensitivity
Consolidated Sandstone Bedrock
Deep Fractured or Carbonate Bedrock
Semi-consolidated Valley Fill Sediments (confined)

Public water systems must conduct routine monitoring for contaminants in accordance with Federal Safe Drinking Water Act requirements. A community public water supply, like Sidney, must sample in accordance with schedules specified in the Administrative Rules of Montana (ARM). Monitoring includes coliform bacteria, lead, copper, nitrate, nitrite, volatile organic chemicals (including hydrocarbons and chlorinated solvents), inorganic chemicals (including metals), synthetic organic chemicals (including pesticides), and radiological contaminants. Transient, non-community PWSs are required to conduct routine monitoring only for pathogens (including coliform bacteria), nitrate, and nitrite. All contaminant concentrations detected in required samples must comply with numeric maximum contaminant levels (MCLs) specified in the Federal Safe Drinking Water Act.

Sidney PWS Water Quality

Within the past five years, no positive fecal coliform samples were collected during routine contaminant monitoring. No MCL exceedances were noted for any other constituents monitored over the past five years, this includes nitrate. The highest nitrate value recorded at the PWS is 5.8 milligrams per liter (mg/l), and an average value of 1.2 mg/l which is significantly below the MCL of 10 mg/l (Appendix B).

CHAPTER 2
DELINEATION

The source water protection areas for the Sidney public water system are delineated in this chapter. The purpose of delineation is to map the land areas that contribute water to the aquifer used by Sidney public water supply and to define areas that help prioritize source water protection efforts. The management areas identified within the larger source water protection area included the control zone, inventory region, surface water buffer, and recharge region. The control zone is an area at least 100-foot radius around the well. The management goal of the control zone, also known as the exclusion zone, is to protect against the direct introduction of contaminants into the wells or in the immediate area surrounding each well. The inventory region represents the zone of contribution of the well, which approximates a three-year groundwater time-of-travel. Analytical equations describing ground water flow using estimates of pumping and aquifer characteristics, and simple hydrogeologic mapping are used to calculate groundwater time-of-travel distance (Appendix C). The management goal of the inventory region is to focus on pollution prevention activities at potential contaminant sources where it is likely that contaminated water would flow into the wells within a relatively short time-frame. A surface water buffer zone has been delineated around the Lone Tree Creek and its major tributaries to account for the interaction of surface water and groundwater. The surface water buffer includes ½-mile buffers around associated surface waters for 10 miles upstream of the city's wells or to watershed limits, whichever distance is shorter. The management goal of the surface water buffer is to protect against the introduction of pathogens and nitrates into the wells through surface water-groundwater interaction. The recharge region represents the entire portion of the aquifer that contributes water to the Sidney water system. Management in the recharge region should focus on maintaining and improving the quality of groundwater that could reach each well over longer timeframes or with increased water usage.

General Hydrogeologic Setting

Aquifers in this region have been grouped together based on their depth from the land surface. The groups are referred to as hydrologic units. The shallow hydrologic unit represents aquifers within 200 feet of the land surface (Slagle et al. 1983, Smith et al. 2000). In most places this includes aquifers with in the alluvium and terrace deposits, and sandstones in the upper part of the Fort Union Formation. Ground-water flow within this shallow hydrologic unit is generally from upland areas toward local stream tributaries and major streams. Recharge to the shallow hydrologic unit comes primarily from infiltration of precipitation; to a lesser extent recharge also comes from water loses from some stream channels, irrigation ditches, and return flows from irrigated fields (Smith et al. 2000). Below 200 feet a deeper hydrologic unit is present above the pervasive claystone and shale beds in the upper Hell Creek Formation. Ground-water flow within the deep hydrologic unit is from upland areas toward major streams and is generally thought to bypass or flow beneath local tributary valleys. Recharge areas for the deep hydrologic unit comes from near the Sheep Mountains in northern Prairie County and areas in southeastern Fallon County. Sandstones in the lower Hell Creek - upper Fox Hills represent a third hydrologic unit in this region. The Colgate Member of the Fox Hills is an important drilling target in this hydrologic unit (Smith et al, 2000). Ground-water flow in the lower Hell Creek - upper Fox Hills is generally toward major stream including the Yellowstone and Missouri rivers. Recharge appears to come some distance from upland areas west of the Sidney area (Smith et al. 2000).

Local Hydrogeologic Setting

Sidney's public water supply consists of seven active wells. All of the wells are located on the west side of town (Figures 1 and 3). According to Reiten (1998), all of the wells are completed in an alluvial aquifer composed of sands and gravels beneath the Crane Creek terrace. These sand and gravels are part of a buried channel deposit that lies beneath the terrace and the city. The buried channel is identified in the subsurface by anomalously thick saturated sections of alluvial fill, and wells completed in the channel deposit often have higher than average well yield. The buried channel is poorly mapped outside of the Sidney area and there is no expression of the channel at the land surface (Reiten 1998). Reiten noted that silt and clay layers are present in some areas and they separate the aquifer into shallow and deeper zones. However, the silt and clay layers are not laterally continuous and as a result, the shallow and deeper zones are hydraulically connected. These fine-grained layers may provide confining conditions locally but on a larger scale the aquifer can be treated as a leaky semi-confined aquifer (Reiten, 1998). Ground-water flow is generally from the west to the east, and perpendicular to the buried channel (see Reiten's Figure 37 and Figure 3 in this document). Figures 4B and 4C show the conceptual model for regional and local ground-water flow systems. Recharge to the aquifer originates west of Sidney and enters the aquifer by infiltration from precipitation, leakage from the upper reaches of Lone Tree Creek, irrigation ditches, and irrigated fields (Reiten, 1998). Lone Tree Creek loses water to the aquifer up-stream from the Highway 200 Bridge. This area overlies the buried channel with its thicker sections of highly conductive sand and gravel beds. In this area, Lone Tree Creek would not act as an effective hydrologic barrier preventing ground water originating on the west side of the creek from flowing beneath the creek and reaching the wells. The creek appears to gain water from the shallow ground-water system and flows perennially immediately down-stream of the bridge, which is near the eastern boundary of the buried channel.

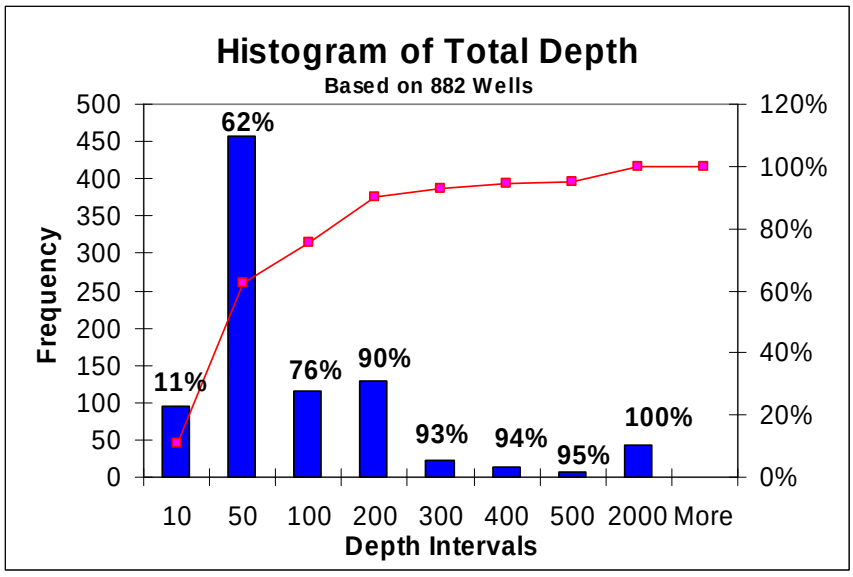

Figure 5. Well Depth Histogram for wells in the Sidney Vicinity.

About 70 percent of the wells in the Yellowstone River Area are completed in the shallow hydrologic unit (Smith et al, 2000). Yield from this hydrologic unit range from 10 gallons per minute (gpm) to 35 gpm, with the higher yields coming from well completed in the alluvial deposits adjacent the Yellowstone River. About 12 percent of the wells in the region are completed in the deep hydrologic unit with yields most often reported as less than 15 gpm (Smith et al, 2000). Ten percent of the wells in the region are completed in the Fox Hills-lower Hell Creek hydrologic unit and report yields routinely less than 15 gpm with some exceptional wells with yields approaching 100 gpm (Smith et al, 2000). Examining well data from the Montana Ground Water Information Center (GWIC) for 882 wells in the vicinity of Sidney reveals that 90% of wells are less than 200 feet deep so they are completed in the shallow hydrologic unit. Average drilling depth for these wells is 122 feet below the land surface and the deepest well in the area is 1,540 feet. Average yield for these wells is 41 gpm and the highest yield reported is 3000 gpm.

Conceptual Model and Assumptions

Source water for the Sidney public water supply comes from unconsolidated sand and gravel deposits ranging between 42 and 117 feet below the land surface. The sand and gravel beds are part of an alluvial sedimentary package deposited within a buried channel beneath the Crane Creek terrace west of town (Figures 3 & 4A). The aquifer is semi-confined and receives recharge generally from land areas west of Sidney and from leakage from the Lone Tree Creek channel west of the Highway 200 Bridge (Figures 4B and 4C). The western boundary of the buried channel is used as the western limit of the aquifer.

Source Well

Seven wells are used to supply water for the Sidney public water supply. Table 4 summarizes well data for the city's wells.

Table 4. Information from drillers logs from wells near the Broadus.

MBMG # DNRC WR#	**36690 W016347-00 Well 5**	**36694 W016351-00 Well 7**	**132774 W016350-00 Well 8**	**36695 Well 9**	**155320 Well 10**	**151342 Well 11**
Location	23N 59E 32 ABCD	23N 59E 32ABCD	23N 59E 32 DABC	23N 59E 32 ABAB	23N 59E 32 DABC	23N 59E 32 ACC
Date Completed	January 1, 1960	June 25, 1962	July 29, 1965	July 17, 1966	September 19, 1972	October 2, 198
Depth (ft bgs*)	42	107	102	110	117	116
Screened Interval (ft**)	32 - 42	72 - 107	67 - 102	72 - 110	79 - 117	101 - 116
SWL Depth (ft bgs*)	20	17	11	15	9	15
PWL Depth (ft bgs*)	-	52	35	27	80	87
Drawdown (ft**)	-	35	24	12	71	72
Test Pumping Rate (gpm***)	2,300	700	600	500	940	1471
Specific Capacity (gpm/ft****)	-	20	25	42	13.2	20.4

*ft bgs = feet below ground surface, **ft = feet, ***gpm = gallons per minute, ****gpm/ft = gallons per minute per foot of drawdown.

Delineation Results

Control Zones

The control zones for each of the city wells consists of a 100 foot fixed radius circle, in accordance with the criteria specified in the Source Water Protection Program Document (1999). All potential sources of contamination are inventoried within the control zone.

Inventory Region

Reiten (1998) established a source water protection area for each well and a combined area for the six active wells in the well field using Time-Of-Travel (TOT) calculations and hydro-geologic mapping. A copy of the Reiten study is included in Appendix D. For this Source Water Delineation and Assessment Report the combined delineation area from Reiten's study is modified slightly to make some of the boundaries coincide with local geographic features such as streets and canals (Figure 3). This makes the inventory region more identifiable to local residence and others helping with source water protection. The modified inventory region encompasses the combined protection area delineated by Reiten (1998). Table 5 below summarizes the TOT input parameters used by Reiten and the TOT calculation results. For a complete listing of the input parameters and results see Appendix D, report Table 11. The western boundary of the inventory region is mapped to coincide with the western boundary of the buried channel.

Table 5 - Estimates of input parameters used by Reiten (1998) to delineate the source water protection area for Sidney for the wells active at the time of the study**.**

Input Parameter	Range of Values and units	Well 5	Well 7	Well 8	Well 9	Well 10	Well 11	Well 12 Drilled after the Reiten study.
PWS Source Code	N/A							-
Transmissivity	ft^2/day	15000	37500	36450	35000	63050	38400	-
Thickness	feet	30	75	81	70	97	64	-
Hydraulic Conductivity	feet/day	500	500	450	500	650	600	-
Hydraulic Gradient	feet/feet	0015-0.0033	0015-0.0033	0.001 – 0.003640.	0.0015 – 0.002	0.0019	0.0041 – 0.0023	-
Flow Direction		Due East	Due East	Due East	Due East	Due East	Due East	-
Effective Porosity	%	0.2	0.2	0.2	0.2	0.2	0.2	-
Pumping Rate	ft^3/day	41 to 170	150 – 540	48 – 600	119 - 472	231 – 940	146 – 1250	-
1-Year TOT*	feet	-	-	-	-	-	-	--
3-Year TOT*	feet	4,350 - 9,500	4,430 – 9,240	2,630 – 9,560	4,400 – 6,180	7,040 – 7,600	7,800 – 14,460	-

Surface Water Buffer Region

The surface water buffer region extends from a point near the intersection of Highway 16 / 200 and Lone Tree Creek to a location approximately 10 miles up-stream (Figure 7 and 8). The buffer also extends ½ mile from either side of Lone Tree Creek. Potential sources of pathogens and nitrate are inventoried within this region.

Recharge Region

The Watershed Region for the Sidney intake encompasses the land area within the Lower Yellowstone Watershed (Fifth Code: 1010004250) (Figures 7 and 8). The watershed has an area of about 100 square miles. General land uses and large potential contaminant sources are inventoried in this region.

Limiting Factors

Reiten (1998) discusses assumptions and limiting factors recognized in his study (see report in Appendix D, page 167). The reader needs to recognize that the inventory region delineation for the City of Sidney PWS wells represents an approximation of the distance required for up-gradient ground water to reach the wells within three years. Numerous assumptions are inherent in the time-of-travel distance calculation. Due to the relatively limited data available on the PWS wells and the hydraulic properties of the aquifer, large uncertainties are associated with estimates of hydraulic conductivity, porosity, aquifer thickness, aquifer extent, hydraulic gradient, and hydraulic boundaries. Clearly, the conceptual model is a simplification of the real ground-water flow system near Sidney, and given the relatively complex geologic history of the area and the lithologic heterogeneities, the real flow regime is more complex than depicted in this report.

CHAPTER 3
INVENTORY

An inventory of potential sources of contamination was conducted to assess the susceptibility of the Sidney PWS to contamination, and to identify priorities for source water protection planning. Inventories were conducted within the control zones, combined inventory, surface water buffer, and recharge regions. The inventory focuses on facilities that generate, use, store, transport, or dispose of potential contaminants, and on land types on which potential contaminants are generated, used, stored, transported, or disposed. Additionally, the inventory identifies potential sources of all primary drinking water contaminants and Cryptosporidium. Only significant potential contaminant sources were selected for detailed inventory. Potential contaminant sources in the Sidney area include: individual septic systems and drainfields, city sewer and storm sewer mains, wastewater discharge points, underground- and above-ground fuel storage tanks, oil and gas test holes and wells, a small crop duster chemical mixing and airport deicer site, State Highway 16 / 200, several parks and a golf course. The majority of these potential contaminant sources are located east of Lincoln Avenue South / Old Cemetery Road, and they are down-gradient from the city's wells (Figure 3). Contaminant sources in this area are not considered to pose a threat to the source water. As a result, the inventory focuses on land areas west of Lincoln Avenue South within the inventory region and a watershed west of Sidney (Figure 3).

Inventory Method

Available databases were initially searched to identify businesses and land uses that are potential sources of regulated contaminants in the inventory region. The following steps were followed:

Step 1: Land cover is identified from the National Land Cover Dataset compiled by the U.S. Geological Survey and U.S. Environmental Protection Agency (U.S.G.S., 2000). Land cover types in this dataset were mapped from satellite imagery at 30-meter resolution using a variety of supporting information.

Step 2: EPA's Envirofacts System was queried to identify EPA regulated facilities. This system accesses the following databases: Resource Conservation and Recovery Information System (RCRIS), Biennial Reporting System (BRS), Toxic Release Inventory (TRI), Permit Compliance System (PCS), and Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS). The available reports were browsed for facility information including the Handler/Facility Classification to be used in assessing whether a facility is a significant potential contaminant source.

Step 3: DEQ databases were queried to identify Underground Storage Tanks (UST), hazardous waste contaminated sites, landfills, and abandoned mines.

Step 4: A business phone directory was consulted to identify businesses that generate, use, or store chemicals in the inventory region. Equipment manufacturing and/or repair facilities, printing or photographic shops, dry cleaners, farm chemical suppliers, and wholesale fuel suppliers were targeted by Standard Industrial Codes.

Step 5: Major road and rail transportation routes were identified.

Step 6. All significant potential contaminant sources were identified in the inventory region and land uses and facilities that generate, store, transport, or dispose large quantities of hazardous materials were identified within the recharge region.

Potential contaminant sources are designated as significant if they fall into one of the following categories:

1) Large quantity hazardous waste generators
2) Landfills
3) Hazardous waste contaminated sites
4) Underground storage tanks
5) Major roads or rail transportation routes
6) Cultivated cropland
7) Animal feeding operations
8) Wastewater lagoons or spray irrigation
9) Septic systems
10) Sewered residential areas
11) Storm sewer outflows
12) Floor drains, sumps, or dry wells
13) Abandoned or active mines

Inventory Results/Control Zones

Sidney's wells are located on the western edge of town (Figure 3). Control zones for the wells include portions of the parks, streets, State Highway 16 / 200, residential lots, and parking areas. Potential contaminant sources may include: accidental spills from large vehicles on the highway, fertilizer and herbicide application in parks and lawns near the wells, infiltration of septic effluent, and leaks from city sewer mains

Inventory Results/Inventory Region

Table 6 summarizes the significant potential contaminant sources that are located within the inventory region (Figure 3). This region includes developed and relatively undeveloped areas on the west side of Sidney as well as some agricultural land and grassland (Figure 3 and Figure 6). Significant potential contaminant sources in the inventory region include: individual septic systems, city sewer and storm sewer mains, State Highway 16 / 200, underground- and above-ground fuel storage tanks, agricultural land, a crop-duster chemical mixing site, aircraft de-icer site, irrigation canals, a golf course, the county fair grounds, and agricultural land (Figures 3 and 6, Table 6).

Land use in the inventory region includes ag-land (30%), low density residential (24%), grassland (20%), Commercial and transportation (19%), and forest (7%) (Figure 6). Agricultural land is considered be a significant potential contaminant source. Over application of fertilizers and/or pesticides can result in those ag-chemicals infiltrating into ground water and running off in to surface water bodies that may have hydraulic connection with aquifers that supply water. The percentage of ag-land in the inventory region is assigned a moderate hazard rating in accordance with the Source Water Protection Program guidelines. Low density residential and the commercial / transportation land uses also are considered a potential threat to the source water due to the fact that most of these land types are served by sewer and storm water sewer mains. The main pipe lines can leak and expose ground water to a variety of contaminants including fuels and solvents (VOCs), pesticides (SOCs), wastes saturated with nitrate, metals, and household chemicals. Because the low density residential and the commercial / transportation landcover surrounds several of the wells, they could pose a threat to the source water.

Many of the significant and non-significant potential contaminant point sources in the Sidney are located in town and east of the inventory region (Figure 3). These potential contaminant sources are considered to be down-gradient from the cities wells do not pose a threat to the source water (Figure 8). Appendix A lists businesses in Sidney based on SIC codes.

Most of the inventory region is made up of low septic density (61%) but there is an area of moderate septic density relatively close to the wells on the west side of Lone Tree Creek (Figure 3). Moderate septic density represents about 8% of the inventory region and under some circumstances could pose a threat to the source water. As mentioned above, Lone Tree Creek is a losing stream in the area west and up-gradient from the City's wells. As a result, the creek would not intercept shallow ground water originating from the moderate septic density areas or prevent it from reaching the City's wells. In other words, the creek does not represent an effective hydrologic barrier to potential contaminant sources located west of the creek. This information can be used to guide future development west of Lone Tree Creek and can help identify areas where city sewer service could be extended to reduce the threat to the city's source water from individual septic systems. There are also several small areas of high septic density in the inventory region but due to their size and location they are not considered to pose a threat to the public water supply. The Sidney Wastewater Treatment Plant appears to be located over a mile east and down-gradient from the public water supply wells, and does not pose a threat to the public water supply.

Table 6. Significant potential contaminant sources in the Inventory Region for Sidney PWS.

Potential Source	ID Number On Maps	Potential Contaminants	Hazard
On-site residential septic systems (8% and 61% of the inventory region is underlain by Moderate and Low Septic Density, respectively)	Not Numbered	Nitrate and pathogens	Infiltration into ground water
Municipal Sewer (About 30% of the inventory region is underlain by sewer mains)	Not Numbered	Nitrate and pathogens	Leaks resulting in Infiltration into ground water
Under ground fuel storage tanks (USTs) (2 within region)	Not Numbered	VOCs, fuels, petroleum products	Spills and leaks resulting in infiltration into ground water
Crop Duster Chemical Mixing Site and Airport deicer and fuel tanks	20	VOCs and SOCs	Spills and leaks resulting in infiltration into ground water
County Shops with above ground fuel tanks	21	VOCs (fuels and solvents)	Spills and leaks resulting in infiltration into ground water
Golf Course	22	SOCs and nitrate	Spills, over application, surface runoff
Fair Grounds with wastewater discharge	23	Nitrate and pathogens	Storm water runoff livestock areas resulting in infiltration into ground water
Irrigation Canals	24	Nitrate and pathogens	Water loss resulting in Infiltration into ground water
Highway	Not Numbered	VOCs, and SOCs, , pathogens, nitrate, and other hazardous materials	Accidents and spills involving large trucks

Table 6. Significant potential contaminant sources in the Inventory Region for Sidney PWS.

Potential Source	ID Number On Maps	Potential Contaminants	Hazard
Cultivated Cropland (30 % of the inventory region).	Not Numbered	Fertilizers, pesticides, pathogens, nitrate	Spills, over application, surface runoff
Assorted businesses in town	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Releases or spills, mishandling of chemicals, improper disposal of chemicals anywhere near the river
Class V Injection Wells (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system

From the above list of potential contaminant sources, some are considered significant based upon the following factors: the volume of potential releases, the volume of hazardous materials typically handled, the potential of the released materials to impact nearby surface water or groundwater, and the proximity of the sources to the PWS surface water intakes. Significant potential contaminant sources from the above list are discussed individually in the following section on susceptibility assessment and they are listed in Table 8.

Inventory Results/Surface Water Buffer Region

Potential sources of pathogens and nitrate are inventoried in the surface water buffer region. The moderate septic density area mentioned above falls within the surface water buffer region. Otherwise, the rest of this region has low septic density. Several storm water discharge sites are located within this region and appear to be related to mining and auto wrecking, and they would not be sources of pathogens or nitrate. There does not appear to be any confined animal feeding operations (CAFOS), or other potential sources of pathogens or nitrate in the surface water buffer region.

Landuse in this region consists of 55% grassland, 31% agricultural land, 7% low density residential, and 2% open water and wetlands. The ag-land poses a moderate level hazard to the source water although it should be noted that the ag-land is concentrated in the upper portion of the surface water buffer region (Figure 7).

Inventory Results/Recharge Region

Table 7 summarizes the significant potential contaminant sources that are located within the recharge region (Figures 7 and 8). Potential contaminant sources include: State Highway 16 / 200, agricultural land, storm water and wastewater discharge sites, oil and gas wells and test holes, underground fuel storage tanks, multiple businesses in town, confined animal feeding operation, and possibly Class V injection wells.

Predominant land covers in the Watershed Region include ag-land (57%), grassland (40%), and forest (3%) (Figure 7). A large portion of the agricultural landcover is concentrated in the more distal portions of the watershed; on the order of 5 to 10 miles from the western inventory region border (Figure 7). Activities on agricultural land are considered be a significant potential contaminant source within the recharge region. The concern here is that mismanagement or over application of fertilizers and/or pesticides can result in those ag-chemicals infiltrating into ground water and running off in to surface water bodies that may be in hydraulic connection with aquifers used for water supplies. Due to the large portion of the recharge region over which fertilizers and/or pesticides may be applied, the ag-chemicals are considered a potential threat to the City of Sidney PWS. Relatively large areas of grassland are concentrated on either side of he Lone Tree Creek valley and extend down-valley to the area just west of the Sidney wells. A Grassland and forestland are not considered to be potential contaminant sources.

Most of the significant potential contaminant point sources in the watershed are located in town and east of the city's wells and the inventory region (Figure 8). These potential contaminant sources are considered to be either down-gradient from the cities wells or are far enough away from Sidney so as not to pose a threat to the source water (Figure 8). A full listing of businesses in the City of Sidney (based on SIC codes) was compiled and is present in Appendix A. Low septic densities occur over the largest portion of the recharge region.

Table 7. Significant potential contaminant sources in the Recharge Region for Sidney PWS.

Potential Source	ID Number on Maps	Potential Contaminants	Hazard
State Highway 16 / 200	8 & 17	Pesticides, fertilizers, VOCs, other	Spills, storm water runoff, infiltration into ground water.
Cultivated Cropland	Not Numbered	Fertilizers, pesticides, pathogens, nitrate	Spills, over application, surface runoff
Storm Water / Wastewater Discharges	14 & 15	VOCs, SOCs, pathogens, nitrate, TDS	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow discharge of contaminants with wastewater to surface water
Gas and Oil Wells	19	Total Dissolved Solids, Petroleum Hydrocarbons	Migration of brine wastewater into shallow groundwater discharging to surface water, surface runoff to surface water
USTs/LUSTs	Not Numbered	VOCs, petroleum hydrocarbons	Spills, leaks impacting groundwater and or reaching surface water
Assorted businesses in town	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Releases or spills, mishandling of chemicals, improper disposal of chemicals anywhere near the river
Confined Animal Feeding Operation (CAFO)	1	Nitrate, pathogens	Storm water runoff, infiltration into shallow ground water.
Mining Operations (gravel pits)	Not Numbered	- variety of hazardous materials including VOC's and SOCs	Accidental spills or illegal dumping

Table 7. Significant potential contaminant sources in the Recharge Region for Sidney PWS.

Potential Source	ID Number on Maps	Potential Contaminants	Hazard
Class V Injection Wells (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system

From the above list of potential contaminant sources, some are considered significant based upon the following factors: volume of potential releases, the volume of hazardous materials typically handled, the potential of the released materials to impact nearby surface water or groundwater, and the proximity of the sources to the city's wells.

Inventory Update

To make this SWDAR a useful document in the years to come, the owners, manager, or the certified water system operator(s) for the public water supply should update the inventory for their records every year. Changes in land uses or potential contaminant sources should be noted and additions made as needed. The complete inventory should be submitted to DEQ at least every 5 years to ensure that this report/plan stays current in the public record.

Inventory Limitations

The extent of the potential contaminant source inventory is limited in several respects. The inventory is based on data readily available through state documents, published reports, and other public sources. Documentation may not be readily available on some potential sources. As a result, all potential contaminant sources may not have been identified. In some instances, inadequate location information precluded the inclusion of potential sources in the inventory.

CHAPTER 4
SUSCEPTIBILITY ASSESSMENT

Susceptibility is the potential for a public water supply to draw water contaminated by inventoried sources. Susceptibility is assessed in order to prioritize potential pollutant sources for management actions by local entities, in this case the City of Sidney and Richland County.

The goal of source water management is to protect the source water by 1) controlling activities in the control zone, 2) managing significant potential contaminant sources in the inventory region, and 3) ensuring that land use activities in the recharge region pose minimal threats to the source water. Management priorities in the inventory region are determined by ranking the significant potential contaminant sources identified in the previous chapter according to susceptibility. Alternative management approaches that could be pursued by the Sidney PWS operators, city, and county officials to reduce susceptibility are recommended.

Susceptibility is determined by considering the hazard rating for each potential contaminant source and the existence of barriers that decrease the likelihood that contaminated water will flow to the PWS well(s) (Tables 8 and 9). For point sources, hazard is rated by the proximity of a potential contaminant source to the well(s). A high hazard rating is assigned to point sources located within the 1-year time-of-travel distance to a well. A moderate hazard rating is assigned to point sources located between the 1-year time-of-travel distance and the 3-year time-of-travel distance to a well. A low hazard rating is assigned to point sources located farther than the 3-year time-of-travel distance to a well. Hazard ratings for nonpoint sources are assigned based on the following criteria in Table 8.

Table 8. Hazard of potential contaminant sources for the Poplar public water system wells.

	High Hazard	**Moderate Hazard**	**Low Hazard**
Point Sources of All Contaminants	Within 1-year TOT	1- to 3-year TOT	Over 3-year TOT
Septic Systems	More than 300 per sq. mi.	50 – 300 per sq. mi.	Less than 50 per sq. mi.
Municipal Sanitary Sewer (% land use)	More than 50 % of region	20 to 50 % of region	Less than 20 % of region
Cropped Agricultural Land (% land use)	More than 50 % of region	20 to 50 % of region	Less than 20 % of region

Barriers to contamination can be anything that decreases the likelihood that contaminants will reach a spring or well. Barriers can be engineered structures, management actions, or natural conditions. Examples of engineered barriers are spill catchment structures for industrial facilities and leak detection for underground storage tanks. Emergency planning and best management practices are considered management barriers. Thick clay-rich soils, a deep water table or a thick saturated zone above the well intake can be natural barriers. Table 9 shows how barriers are used to adjust the final susceptibility ratings.

Table 9. Susceptibility of Source Water based on Hazard rating and the presence of Barriers

	High Hazard Rating	Moderate Hazard Rating	Low Hazard Rating
No Barriers	Very High Susceptibility	High Susceptibility	Moderate Susceptibility
One Barrier	High Susceptibility	Moderate Susceptibility	Low Susceptibility
Multiple Barriers	Moderate Susceptibility	Low Susceptibility	Very Low Susceptibility

Susceptibility ratings are presented individually for each significant potential contaminant source and each associated contaminant on the following page (Table 10).

Susceptibility Assessment Results

Table 10. Susceptibility Assessment Significant Potential Contaminant Sources in the Inventory and Recharge Regions Sidney PWS

Inventory Region							
Source	**ID Number on Maps**	**Contaminant**	**Hazard**	**Hazard Rating**	**Barriers**	**Susceptibility**	**Management Recommendations**
USTs/LUSTs (2 sites within 1-year TOT)	Not Numbered	VOCs, petroleum hydrocarbons	Spills, leaks impacting groundwater and or reaching surface water	**High**	-Tanks in compliance with current standards (Spill prevention, monitoring, and leak detection) -Neither site has leak history - Depth to screened interval (100 feet or more)	**Moderate**	Carry out periodic inspections Spill response planning, tank and groundwater monitoring
Crop Duster Chemical Mixing Site and Airport deicer	20	VOCs and SOCs, others?	Spills and leaks resulting in infiltration into ground water	**High**	- Depth to screened interval (100 feet or more) -Relatively small facility used seasonally	**Moderate**	Carry out periodic inspections and require proper equipment maintenance and spill cleanup.
County Shops with above ground fuel tanks	21	VOCs (fuels and solvents)	Spills and leaks resulting in infiltration into ground water	**High**	- Depth to screened interval (100 feet or more) -Relatively small facility	**Moderate**	Carry out periodic inspections and require proper equipment maintenance and spill cleanup.
Irrigation Canals	24	Nitrate and pathogens	Water loss resulting in Infiltration into ground water	**High**	- Depth to screened interval (100 feet or more) -Operates seasonally when dilution would be expected to be most effective	**Moderate**	Support efforts to line canals to reduce water loss. Support the agricultural community's educational efforts to distribute materials and resources to land owners on the proper application and storage of pesticide and fertilizers; implement agricultural BMPs
Municipal Sewer (30% of inventory region underlain by sewer mains)	Not Numbered	Nitrate, pathogens	Leaks in mains/lines, system failure, infiltration of untreated effluent into shallow	**Moderate**	- Depth to screened interval (100 feet or more)	**Moderate**	Ongoing testing and maintenance of lines and system, replacement of old lines, compliance with current regulations for

Table 10. Susceptibility Assessment Significant Potential Contaminant Sources in the Inventory and Recharge Regions Sidney PWS

Inventory Region							
Source	**ID Number on Maps**	**Contaminant**	**Hazard**	**Hazard Rating**	**Barriers**	**Susceptibility**	**Management Recommendations**
			ground water, which may in turn reach surface water				discharges
On-site residential septic systems (8% and 61% of the inventory region underlain by Moderate and Low Septic Density, respectively)	Not Numbered	Nitrate, pathogens	Leaks in septic tanks, leaks in collection lines, system failure, infiltration of untreated effluent into shallow ground water, which may in turn reach surface water	**Moderate**	- Depth to screened interval (100 feet or more)	**Moderate**	Provide educational information to home owners on proper disposal of potential contaminants and on maintenance of septic systems. Support efforts to extend city sewer services.
Cultivated Cropland (30% in the inventory region, 57% in the watershed region)	Not Numbered	Fertilizers, pesticides, pathogens, nitrate	Spills, over application, surface runoff	**Moderate**	- Depth to screened interval (100 feet or more)	**Moderate**	Support the agricultural community's educational efforts to distribute materials and resources to land owners on the proper application and storage of pesticide and fertilizers; implement agricultural BMPs
Highways (about $1^{1/2}$ mile of MT 16 is within the inventory region)	8 & 17	Pesticides, fertilizers, VOCs, other	Spills, storm water runoff, infiltration into ground water.	**High**	- Depth to screened interval (100 feet or more) -**Not a major truck route**	**Low**(Reduced from moderate because of low traffic load, see text below)**	Continue monitoring and encourage state and local officials to proceed to have site mitigated.
Fair Grounds with wastewater discharge	23	Nitrate and pathogens	Storm water runoff resulting in infiltration into ground water	**High**	- Depth to screened interval (100 feet or more) -Relatively small facility used seasonally	**Low**	Maintain facilities Apply proper disposal procedures for animal wastes
Golf Course	22	SOCs and nitrate	Spills, over application, surface runoff	**Moderate**	- Depth to screened interval (100 feet or more) - Relatively small	**Low**	Follow application instructions to avoid over application Adopt best management practices (BMPs) for herbicides on golf courses

Table 10. Susceptibility Assessment Significant Potential Contaminant Sources in the Inventory and Recharge Regions Sidney PWS

Inventory Region							
Source	**ID Number on Maps**	**Contaminant**	**Hazard**	**Hazard Rating**	**Barriers**	**Susceptibility**	**Management Recommendations**
					facility used seasonally		
Assorted businesses in town	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Releases or spills, mishandling of chemicals, improper disposal of chemicals anywhere near the river	**Low**	-Business district and most business locations are down gradient of the well field.	**Very Low**	Support efforts to provide educational workshops to the general public by the city, county, or state promote safe handling and proper storage, transport, use, and disposal of hazardous materials. Scheduled days for the collection of hazardous wastes from the public.
Class V Injection Wells (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system	**Unknown**	**Unknown**	**Unknown**	Inventory; Provide educational information, materials and resources to business owners and the public on proper waste disposal and recycling

Recharge Region							
Source	**ID Number on Maps**	**Contaminant**	**Hazard**	**Hazard Rating**	**Barriers**	**Susceptibility**	**Management Recommendations**
Gas and Oil Wells	Not Numbered	Total Dissolved Solids, Petroleum Hydrocarbons	Migration of brine wastewater into shallow groundwater discharging to surface water, surface runoff to surface water	**Moderate**	- None	**High**	Monitor drilling activities and oil field development near or adjacent the Inventory and Recharge regions. Support efforts to properly abandon test holes and wells
State Highway 16 / 200	8 & 17	Pesticides, fertilizers, VOCs, other	Spills, storm water runoff, infiltration into ground water.	**Moderate**	- Local and state emergency response	**Moderate**	Maintain vigilant for accidents involving large vehicles Maintain emergency response plan and support training and preparation of local response personnel
Cultivated Cropland	Not Numbered	Fertilizers, pesticides, pathogens, nitrate	Spills, over application, surface runoff	**Moderate**	-Distance from well field (most of the ag-land is in the mid- to upper portion of the watershed	**Moderate**	Support efforts to provide educational information, materials and resources to land owners on the proper application and storage of pesticide and fertilizers; implement agricultural BMPs
Storm Water / Wastewater Discharges	14, 15	VOCs, SOCs, pathogens, nitrate, TDS	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow discharge of contaminants with wastewater to surface water	**Low**	-Distance from well field (dilution)	**Low**	Encourage proper maintenance and operation of system; monitor leaks in system; develop an alternative treatment plan in the event of system failure
USTs/LUSTs	Not Numbered	VOCs, petroleum hydrocarbons	Spills, leaks impacting groundwater and or reaching surface water	**Low**	- Tanks are located down-gradient from well field - -Tanks in compliance with current standards (Spill prevention, monitoring, and leak detection)	**Low**	Carry out periodic inspections Spill response planning, tank and groundwater monitoring

Recharge Region							
Source	**ID Number on Maps**	**Contaminant**	**Hazard**	**Hazard Rating**	**Barriers**	**Susceptibility**	**Management Recommendations**
Assorted businesses in town	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Releases or spills, mishandling of chemicals, improper disposal of chemicals anywhere near the river	**Low**	-Business district and most business locations are down gradient of the well field.	**Low**	Support efforts to provide educational workshops to the general public by the city, county, or state promote safe handling and proper storage, transport, use, and disposal of hazardous materials. Scheduled days for the collection of hazardous wastes from the public.
Confined Animal Feeding Operation (CAFO)	1	Nitrate, pathogens	Storm water runoff, infiltration into shallow ground water.	**Low**	-Site is down-gradient from well field.	**Very Low**	Continue monitoring, encourage best management practices for CAFOs
Mining Operations (gravel pits)	Not Numbered	- variety of hazardous materials including VOC's and SOCs	Accidental spills or illegal dumping	**Low**	- Few in number and small size	**Very Low**	Restrict access to abandoned gravel pits, maintain vigilance for illegal dumping.
Class V Injection Wells (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.	Not Numbered	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system	**Unknown**	**Unknown**	**Unknown**	Inventory; Provide educational information, materials and resources to business owners and the public on proper waste disposal and recycling

The susceptibility assessment results for each significant potential contaminant source identified is described below:

UST/LUSTs- Two underground storage tanks housing petroleum products are present within the inventory region and they are within the One-Year Time-Of-Travel distance, which requires assigning them a high hazard rating in accordance with the Source Water Protection Document (DEQ, 2000, Also see Table 8 above). There are several other tank sites just outside the inventory region and appear to be either down-gradient or in cross-gradient locations from the city's wells (Figure3). In December of 1999 EPA required all USTs to meet an updated set of standard. For most operators, meeting this requirement meant removing old tanks and replacing them with new tanks. Leak prevention and detection features associated with the new tanks are considered barriers that reduce the susceptibility of a water supply to contamination from those tanks. In addition, the two tank sites within the inventory region do not have a history of leaking. With multiple barriers identified for these tanks susceptibility is rated as moderate. In the recharge region all of the tanks are down-gradient from the city's wells and the susceptibility to these tanks is low to very low. A list of petroleum leaks in the Sidney area is included in Appendix C.

Crop Duster Mixing Site - A crop duster chemical mixing and airport de-icer site near the airport beacon is located near the One-Year Time-Of-Travel distance (Figure 3). Spills and leaks of pesticide and herbicides at this site are considered to be significant potential contaminant sources. However, it is not known if commercial volumes of chemicals are stored and used at the site. A high hazard rating is assigned to the site, and with multiple barriers identified, susceptibility is assigned as moderate.

County Shops – The County Shops with above-ground fuel tanks are located near where the One-Year Time-Of-Travel line crosses State Highway 16 / 200 (Figure 3). Solvents used to clean equipment may also be stored at this site. It is not known whether commercial volumes of fuels and solvents are stored at this site. A high hazard rating is assigned to the site, and with multiple barriers identified, susceptibility is assigned as moderate.

Irrigation Canal – The Yellowstone Project Main Canal passes through the inventory region up-gradient from the city's wells. Water loss from canals is common and in some cases results in a substantial volume of water moving from the canal into the aquifer system below. As mentioned above, Lone Tree Creek loses water to the aquifer in the area, so it is reasonable to believe the canal does also. The concern here is that the canal may receive water that is lower quality than the aquifer prior to flowing past Sidney, and in this case, the canal would then contribute the lower quality water to the aquifer. Because the canal is within the One-Year Time-Of-Travel distance, a high hazard is assigned. With multiple barriers identified, susceptibility is rated as moderate.

Municipal Sewer System – Municipal sewer mains are present and constitute about 30 percent of the inventory region. Some of the mains may be located relatively close to several city wells. Well depth and the presence of clay layers are interpreted to be barriers to leaks from the mains and lower the potential for contamination. The potential hazard imposed by pathogens and nitrate originating from Sidney's municipal sewer system is moderate. With multiple barriers identified, susceptibility is rated as low.

Septic Systems – It appears that some areas west of town are served by individual septic systems, although updated maps of the cities sewer service were not available for this report (Figure 3). Portions of this area are directly up-gradient of the city's wells. Several small areas of high density exist in the inventory region but their size and distance from the wells makes it unlikely that they pose any threat. The moderate density area is relatively close to several wells but lies on the west side of Lone Tree Creek. The creek is interpreted as a hydrologic barrier preventing shallow ground water originating in the moderate density area from reaching the well field. Well depth and the presence of clay layers would also act barriers to the moderate septic areas that are relatively close to the wells. Hazard is assigned as moderate and with multiple barriers recognized, susceptibility is assigned as low.

Cultivated Crop lands – The potential hazard from pathogens and nitrate originating from agricultural lands is rated as moderate based on the percentage of ag-land in the inventory region . The susceptibility is rated as low with multiple barriers applied. Within the recharge region, hazard is rated as moderate and one barrier is applied resulting in a moderate susceptibility.

Highway- State Highway 16 / 200 passes through the northern portion of the inventory region for about 1 ½ miles, most of this distance is within the One-Year Time-Of-Travel distance, which requires assigning a high hazard rating in accordance with the Source Water Protection Document (DEQ, 2000, (Figure 3). Accidents on the highway could result in a variety of hazardous materials spilled on or along the highway. The highway is not a major trucking route for hauling hazardous material and additional weight was given to this barrier in assigning the low susceptibility rating. It is worth noting that the highway passes relatively close to Well 9 and despite the low volume of traffic, this well is somewhat more susceptible to accidents and spills on the highway. It would be advisable to place a higher priority on protecting Well 9 from the threat posed by the highway.

Fairgrounds – Wastewater discharge from the fairgrounds can be a source of nitrate and pathogens. Hazard is rated as high because the facility is within the One-Year Time-Of-Travel distance but additional weight is given to a barrier that recognized the facility is relatively small and used only on a seasonal basis. Susceptibility is assigned as low.

Golf Course – The golf course is used seasonally, is relatively small, and is located beyond the One-Year Time-Of-Travel line shown in Figure 3. Hazard is assigned as moderate in accordance with the Source Water Protection Document (DEQ, 2000). Susceptibility is assigned as low with multiple barriers identified.

Assorted Businesses in Town- Appendix A lists various businesses in town that are considered to represent non-significant potential contaminant sources based on the criteria within the Source Water Protection Guidelines (DEQ, 1999). Based on their location with respect to the public water supply wells, these businesses are not considered to pose a threat to the Sidney Public Water Supply. Some of the business sites may represent significant potential contaminant sources for other public water supplies in and around Sidney. Source Water Delineation and Assessment Reports for those public water supplies will assess hazard and susceptibility for those water systems. However, a simple proactive step to reducing the risk of unnecessary contamination in the community is to provide educational information and resources to business owners and the public on proper waste disposal and recycling. Hazard for businesses in town is low, susceptibility is very low.

Class V Injection Wells – The potential hazard imposed by VOCs, SOCs, pathogens, nitrate, and other contaminants originating from the class V injection wells cannot be determined due to the fact that no inventory of Class V well is complete for most of Montana or the current inventory is inadequate. The susceptibility of the intake to contaminants originating from this source is unknown.

Oil Wells and Test Hole- Petroleum exploration activities in the Sidney area have been significant in the past 50 to 60 years. Numerous test holes and exploratory wells have been completed in the area. Based on available data, there appear to be a fair number of exploratory wells in the recharge region (Figure 8). When the old exploratory wells are not properly plugged and abandoned, they can act as conduits for highly saline formation water to gain access to aquifers that are used for water supply. Due to the fact that water in the deeper formations is under higher hydrostatic pressure, means that the water rises up the well borehole and can be "pushed" into other shallower deposits. If those shallower deposits are aquifers, the saline waters will basically contaminant the aquifer and degrade the original water quality. In some parts of the state this is a serious problem that threatens the source water for several communities. The barriers applied to other potential contaminant sources in this susceptibility analysis are less affective or not affective at all in preventing the saline formation water from gaining access to fresh water aquifers. The best way to prevent this type of contamination is to identify old exploratory wells and properly plug and abandon them. Due to the significant number of exploratory wells in the recharge region, a moderate hazard is assigned. With no barriers applied, susceptibility is rated as high.

Wastewater Discharges- The potential hazard from VOCs, SOCs, pathogens, and nitrate originating from wastewater discharges is low because the discharge sites are either a significant distance from the city's wells or they are down-gradient from the wells. Susceptibility is also rated as low.

Confined Animal Feeding Operations- One Confined Animal Feeding Operation (CAFOs) is located in the recharge region (Figure 8). It is down-gradient from the city's wells and does not pose a threat to the source water. Hazard is low, susceptibility is very low. In addition, on June 10, 1974, the federal Environmental Protection Agency (EPA) delegated authority to Montana for administration of the Montana Pollutant Discharge Elimination System (MPDES). The MPDES issues permits to control point source discharges of pollution. A CAFO is defined in Section 502 of the Clean Water Act as a point source of pollution. Discharges from CAFOs require a permit.

Mining Operations- Based on available information, the mining operations in the area are relatively small and simply represent sand and gravel operations. They are assigned a low hazard and very low susceptibility. However, it is important to understand that gravel pits are essentially large openings into the shallow ground water system and if hazardous materials are accidentally or illegally dumped into the pits the results can be serious. It is always advisable to restrict access to abandoned sand and gravel pits, especially those located up-gradient from water supply wells.

Management Recommendations

It should be noted that even small releases of some chemicals in close proximity to a well can have significant negative impact on water quality, and is therefore a significant threat to the public water supply. Steps can be taken to reduce the likelihood of releases in the source water for the PWS or in the vicinity of the sources. Some of these steps (considered management recommendations) are listed below.

Some management recommendations are also included in the susceptibility table for the Sidney PWS (Table 10). If these, and other, management actions are implemented, they may be considered additional barriers that will reduce the susceptibility of the intake to specific sources and contaminants.

Management recommendations fall into the following categories:

- Sewer maintenance and leak detection
- Municipal sewer extension
- Agricultural best management practices
- Stormwater management
- Proper disposal and monitoring of oil and gas production wastewater
- Education
- Emergency Response Planning

Sewer Maintenance and leak detection – Early warning of leaks and scheduled replacement of aging sewer lines may reduce the susceptibility of the City's PWS to contamination from municipal septic wastes, and could also benefit other public water supplies in the Sidney area.

Sewer Extension – Installation of advanced septic treatment systems such as sand filters can limit contamination from new rural residential development, however, annexation and extension of sewers is the only way to reduce contamination from existing unsewered developments.

Agricultural and silvicultural best management practices (BMPs) – BMPs that address application and mixing of fertilizer and pesticides are a viable alternative to prohibition of their use. BMPs may also be utilized to minimize surface runoff and soil erosion on cultivated fields. Erosion control, selective logging, and other silvicultural practices (essentially BMPs) should be considered on a county-wide basis. BMPs are generally voluntary but their implementation can be encouraged through education and technical assistance. County planning can help promote the implementation of BMP on lands that are outside city limits but indirectly affect the city PWS.

Education - Educational workshops provided to the general public by the city, county, or state promote safe handling and proper storage, transport, use, and disposal of hazardous materials. Ongoing training provided to designated emergency personnel will promote the efficiency and effectiveness of emergency responses to hazardous material spills. Likewise, educational workshops provided to rural homeowners will promote the proper maintenance and replacement of residential septic systems. The EPA and the State of Montana can provide educational materials on these topics.

Hazardous Materials Collection Days – Several counties in the state that have vulnerable water supplies have implemented scheduled days for the collection of hazardous wastes from the public. These vary in the inclusiveness of what materials are collected, how the materials are handled, and how they are disposed of, but they all act to reduce the amount of unauthorized or improper disposal of these wastes. Used motor oil collection station could be established and available to the public on a regular basis.

Emergency Response Plan – Several counties have compiled Emergency Response Plans that were then adopted by the local communities. The usefulness and effectiveness of a response plan are maximized if it contains a clear listing of all emergency contacts, emergency numbers, and resources available within the

county to respond to an emergency situation, such as a hazardous material spill. Emergency plans are not difficult to develop or distribute, but have a significant benefit to the citizens and municipalities within the county.

CHAPTER 5
MONITORING WAIVERS

Waiver Recommendation

It appears that the City of Sidney does not have any water quality waivers. Based on past monitoring results or the susceptibility assessment of the city's source water, Sidney PWS may not be eligible for monitoring waivers. However, to be sure that eligibility for all available waivers is considered, the PWS Operators are encouraged to carefully review the following section on Monitoring Waiver Requirements. If after reviewing this section it is determined that an additional waivers are feasible, the Sidney PWS should submit a letter with the proper documentation to DEQ requesting monitoring waivers. Table 11 shows how identified potential contaminant sources affect the eligibility for monitoring waivers.

Table 11. Susceptibility Assessment as it relates to waiver eligibility for significant potential contaminant sources in the Spill Response Region Sidney PWS surface water intakes.

Source	Contaminant	Susceptibility	Waiver Eligibility
Oil Wells and Test Holes	Total Dissolved Solids (TDS), Petroleum, Hydrocarbons	**High**	The number of drilling activity in the watershed likely precludes a waiver
UST/LUST Sites and other sources of VOCs	VOCs, fuels, petroleum products	**Moderate**	The number of sources in the Sidney area likely precludes a waiver
Cultivated Cropland and mixing sites	Fertilizers, pesticides, pathogens, nitrate	**Moderate**	Chemical use likely precludes waivers for some chemicals
Municipal Sewer System, Septic Systems, and CAFO.	Pathogens, nitrate	**Low to Very Low**	Waivers are not available for pathogens and nitrate
Highway	Pesticides, fertilizers, VOCs, other	**Low**	Although traffic is low on the highway, chemical use in the areas likely precludes waivers for some chemicals
Wastewater Discharges	VOCs, SOCs, pathogens, nitrate, TDS	**Low to Very Low**	Waivers are not available for pathogens and nitrate
Assorted Businesses in Town	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	**Very Low**	Chemical use likely precludes waivers for some chemicals Waivers are not available for pathogens and nitrate
Mining Operations	Metals	**Low**	Extensive mining within the Yellowstone River watershed likely precludes waivers
Class V Injection Wells	VOCs, SOCs, pathogens, nitrate	**Very Low**	Waivers are not available for pathogens and nitrate

Monitoring Waiver Requirements

The 1986 Amendments to the Safe Drinking Water Act require that community and non-community PWSs sample drinking water sources for the presence of volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). The US EPA has authorized states to issue monitoring waivers for the organic chemicals to systems that have completed an approved waiver application and review process. All PWSs in the State of Montana are eligible for consideration of monitoring waivers for several organic chemicals. The chemicals diquat, endothall, glyphosate, dioxins, ethylene dibromide (EDB), dibromochloropropane (DBCP), and polychlorinated biphenyls are excluded from monitoring requirements by statewide waivers.

Use Waivers

A Use Waiver can be allowed if through a vulnerability assessment, it is determined that specific organic chemicals were not used, manufactured, or stored in the area of a water source (or source area). If certain organic chemicals have been used, or if the use is unknown, the system would be determined to be vulnerable to organic chemical contamination and ineligible for a Use Waiver for those particular contaminants.

Susceptibility Waivers

If a Use Waiver is not granted, a system may still be eligible for a Susceptibility Waiver, if through a vulnerability assessment it is demonstrated that the water source would not be susceptible to contamination. Susceptibility is based on prior analytical or vulnerability assessment results, environmental persistence, and transport of the contaminants, natural protection of the source, wellhead protection program efforts, and the level of susceptibility indicators (such as nitrate and coliform bacteria). The vulnerability assessment of a surface water source must consider the watershed area above the source, or a minimum fixed radius of 1.5 miles upgradient of the surface water intake. PWSs developed in unconfined aquifers should use a minimum fixed radius of 1.0 mile as an area of investigation for the use of organic chemicals. Vulnerability assessment of spring water sources should use a minimum fixed radius of 1.0 mile as an area of investigation for the use of organic chemicals. Shallow groundwater sources under the direct influence of surface water (GWUDISW) should use the same area of investigation as surface water systems; that is, the watershed area above the source, or a minimum fixed radius of 1.5 miles upgradient of the point of diversion. The purpose of the vulnerability assessment procedures outlined in this section is to determine which of the organic chemical contaminants are in the area of investigation.

Given the wide range of landforms, land uses, and the diversity of groundwater and surface water sources across the state, additional information is often required during the review of a waiver application. Additional information may include will logs, pump test data, or water quality monitoring data from surrounding public water systems; delineation of zones of influence and contribution to a well; Time-of-Travel or attenuation studies; vulnerability mapping; and the use of computerized groundwater flow and transport models. DEQ's PWS Section and DEQ's Source Water Protection Program will conduct review of an organic chemical monitoring waiver application. Other state agencies may be asked for assistance.

Susceptibility Waiver for Confined Aquifers

Confined groundwater is isolated from overlying material by relatively impermeable geologic formations. A confined aquifer is subject to pressures higher than atmospheric pressure that would exist at the top of the aquifer if the aquifer were not geologically confined. A well that is drilled through the impervious layer into a confined aquifer will enable the water to rise in the borehole to a level that is proportional to the water pressure (hydrostatic head) that exists at the top of a confined aquifer.

The susceptibility of a confined aquifer relates to the probability of an introduced contaminant to travel from the source of contamination to the aquifer. Susceptibility of an aquifer to contamination will be influenced by the hydrogeologic characteristics of the soil, vadose zone (the unsaturated geologic materials between the ground surface and the aquifer), and confining layers. Important hydrogeologic controls include the thickness of the soil, the depth of the aquifer, the permeability of the soil and vadose zones, the thickness and uniformity of low permeability and confining layers between the surface and the aquifer, and hydrostatic head of the aquifer. These factors will control how readily a contaminant will infiltrate and percolate toward the groundwater.

The Susceptibility waiver has the objective of assessing the potential of contaminants reaching the groundwater used by the PWS. A groundwater source that appears to be confined from surface infiltration in the immediate area of the wellhead may eventually be affected by contaminated groundwater flow from elsewhere in the recharge area. Contaminants could also enter the confined aquifer through improper well construction or abandonment where the well provides a hydraulic connection from the surface to the confined aquifer. The extent of confinement of an aquifer is critical to limiting susceptibility to organic chemical contamination. Regional conditions that define the confinement of a groundwater source must be demonstrated by the PWS in order to be considered for a confined aquifer susceptibility waiver. Confinement of an aquifer can be demonstrated by pump test data (storage coefficient), geologic mapping, and well logs. Site specific information is required to sufficiently represent the recharge area of the aquifer and the zone of contribution to the PWS well. The following information should be provided:

- Abandoned wells in the region (zone of contribution to the well),
- Other wells in the region (zone of contribution to the well),
- Nitrate/Coliform bacteria analytical history of the PWS well,
- Organic chemical analytical history of the PWS well,

Susceptibility Waiver for Unconfined Aquifers

Unconfined aquifers are the most common source of usable groundwater. Unconfined aquifers differ from confined aquifers in that the groundwater is not regionally contained within relatively impervious geologic strata. As a result, the upper groundwater surface or water table in an unconfined aquifer is not under pressure that produces hydrostatic head common to confined aquifers.

Unconfined aquifers are usually locally recharged from surface water or precipitation. In general, groundwater flow gradients in unconfined aquifers reflect surface topography, and the residence time of water in the aquifer is comparatively shorter than for water in confined aquifers. Similar water chemistry often exists between unconfined groundwater and area surface water, and physical parameters and dissolved constituents can be an indicator of the hydraulic connection between groundwater and surface water. Consequently, unconfined aquifers can be susceptible to contamination by organic chemicals migrating from the ground surface to groundwater.

The objective of the susceptibility waiver application is to assess the potential of organic chemical migration from the surface to the unconfined aquifer. The general procedures make use of a combination of site specific information pertaining to the location and construction of the source development, monitoring history of the source, geologic characteristics of the unsaturated soil and vadose zones, and chemical characteristics of the organic chemicals pertaining to their mobility and persistence in the environment. The zone of contribution of the unconfined groundwater source must be defined and plotted.

This should describe the groundwater flow directions, gradients, and a 3-year time-of-travel. All surface bodies within 1,000 feet of the PWS well(s) must be plotted. Analytical monitoring history of the PWS well and those nearby should be provided as well.

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GLOSSARY*

Acute Health Effect. An adverse health effect in which symptoms develop rapidly.

Alkalinity. The capacity of water to neutralize acids.

Best Management Practices (BMPs). Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from nonpoint sources.

Coliform Bacteria. Bacteria found in the intestinal tracts of animals. Their presence in water is an indicator of pollution and possible contamination by pathogens.

Confined Aquifer. A fully saturated aquifer overlain by a confining unit such as a clay layer. The static water level in a well in a confined aquifer is at an elevation that is equal to or higher than the base of the overlying confining unit.

Confining Unit. A geologic formation that inhibits the flow of water.

Delineation. A process of mapping source water management areas.

Effective Porosity. The percent of soil, sediment, or rock through which fluids, such as air or water, can pass. Effective porosity is always less than total porosity because fluids can not pass through all openings.

Hardness. Characteristic of water caused by presence of various salts. Hard water may interfere with some industrial processes and prevent soap from lathering.

Hazard. A measure of the potential of a contaminant leaked from a facility to reach a public water supply source. Proximity or density of significant potential contaminant sources determines hazard.

Hydraulic Conductivity. A coefficient of proportionality describing the rate at which water can move through an aquifer.

Inventory Region. A source water management area that encompasses an area expected to contribute water to a public water supply well within a fixed distance or a specified groundwater time-of-travel distance.

Maximum Contaminant Level (MCL). Maximum concentration of a substance in water that is permitted to be delivered to the users of a public water supply. Set by EPA under authority of the Safe Drinking Water Act.

Nitrate. An important plant nutrient and type of inorganic fertilizer. In water the major sources of nitrates are septic tanks, feed lots and fertilizers.

Nonpoint-Source Pollution. Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet.

Pathogens. A bacterial organism or virus typically found in the intestinal tracts of mammals, capable of producing disease.

Point-Source. A stationary location or fixed facility from which pollutants are discharged.

Porosity. The percent of soil, sediment, or rock filled by air, water, or other fluid.

Public Water Supply (PWS). A system that provides piped water for human consumption to at least 15 service connections or regularly serves 25 individuals.

SIC Code. The U.S. Standard Industrial Classification (SIC) Codes classify categories of businesses. SIC Codes cover the entire range of business categories that exist within the economy.

Source Water Protection Area. For surface water sources, the land and surface drainage network that contributes water to a stream or reservoir used by a public water supply.

Susceptibility (of a PWS). The potential for a PWS to draw water contaminated at concentrations that would pose concern. Susceptibility is evaluated at the point immediately preceding treatment or, if no treatment is provided, at the entry point to the distribution system.

Synthetic Organic Compounds (SOC). Man made organic chemical compounds (e.g. pesticides).

Total Dissolved Solids (TDS). The dissolved solids collected after a sample of a known volume of water is passed through a very fine mesh filter.

Total Maximum Daily Load (TMDL). The total pollutant load to a surface water body from point, non-point, and natural sources. The TMDL program was established by section 303(d) of the Clean Water Act to help states implement water quality standards.

Turbidity. The cloudy appearance of water caused by the presence of suspended matter.

Transmissivity. The ability of an aquifer to transmit water.

Unconfined Aquifer. An aquifer containing water that is not under pressure. The water table is the top surface of an unconfined aquifer.

Volatile Organic Compounds (VOC). Any organic compound which evaporates readily to the atmosphere (e.g. fuels and solvents).

Recharge Region / Watershed. The land area that drains into a stream; the watershed for a major river may encompass a number of smaller watersheds that ultimately combine at a common delivery point.

* Definitions taken from EPA’s Glossary of Selected Terms and Abbreviations and other sources.

FIGURES

APPENDICES

BUSINESS NAME	SIC CODE 1	SIC CODE NAME	SIC CODE 2	SIC CODE NAME
A & C Soaring Eagle Truck Supl	753812	Truck-Repairing & Service	.	
A & L Transportation Inc	478977	Refuse Systems		
Action Auto	551102	Auto & Home Supply Stores	553111	Automobile Parts & Supplies-Retail-New
Agri Industries Inc	508444	Pumps (Wholesale)	508305	Irrigation Systems & Equipment (Whol)
All Seasons Motor Sports	555104	Boat Dealers		
All-West Ranch Supply	519119	Livestock Equipment & Supplies (Whol)		
American Medical Oxygen Co	516920	Oxygen (Wholesale)		
Avis Rent A Car	751401	Automobile Renting & Leasing		
Avis Rent A Car	751401	Automobile Renting & Leasing		
B & B Builders	152103	General Contractors		
B & B Builders	152103	General Contractors		
Bear Paw Energy	171131	Energy Management Systems & Products		
Bear Paw Energy Inc	461201	Tour Operators	492501	Refuse Systems
Becker Tractor	508304	Tractor-Dealers (Wholesale)		
Big B Muffler	753301	Automotive Glass Replacement Shops	553120	Shock Absorbers
Big Sky Veterinary Ctr Inc	074201	Veterinarians		
Bob's Pickup & Delivery	421309	Trucking-Motor Freight		
Boyce Drilling	178103	Special Trade Contractors Nec	178102	Special Trade Contractors Nec
Brorson School District	821103	Schools		
Burlington Northern Santa Fe	401101	Railroads		
Busch Agriculture Resources	422101	Grain Elevators		
C & S Mfg	599969	Art Galleries & Dealers		
Cabin Creek Gallery	599969	Art Galleries & Dealers		
Cenex Harvest States Co-Op	554101	Service Stations-Gasoline & Oil	517208	Gas-Liquefied Petro-Bttld/Bulk (Whol)
Central Elementary School	821103	Schools		
Central Hair'em	723106	Beauty Salons	508702	Beauty Salons-Equipment & Supls (Whol)
Chamber Of Commerce	861104	Labor Unions & Similar Organizations	738932	Convention Information Bureaus
Check Rite	738926	Check Cashing Protection Systems	732201	Collection Agencies
Chuck's Plumbing Repair	171105	Plumbing Contractors		
Cody Mac Grady Trucking	421304	Trucking		
Conklin Products	516925	Cleaning Compounds (Wholesale)	508724	Janitors Supplies (Wholesale)
County Supt--Richland School	821103	Schools		
Cross Petroleum Svc	517214	Oils-Lubricating-Wholesale	517210	Gasoline & Oil-Wholesale
Culligan Water Conditioning	549903	Water Companies-Bottled	738984	Water Treatment Equip Svc & Supls
Dale's Plumbing & Repair	171105	Plumbing Contractors	171107	Septic Tanks/Systems-Cleaning/Repairing
Dura Med Plus	504712	Metals Service Centers & Offices	504704	Metals Service Centers & Offices
Earl 18 Elementary School	821103	Schools		
Elk River Printing Inc	733403	Copying & Duplicating Service	308902	Plastics & Plastic Products (Mfrs)
Ferrellgas	517208	Gas-Liquefied Petro-Bttld/Bulk (Whol)		
Fire Prevention	922402	State Government-Fire Protection		
Fire Prevention & Invstgtn Bur	922402	State Government-Fire Protection		
First Choice Collision Ctr	753201	Automobile Body-Repairing & Painting	523110	Glass-Auto Plate & Window & Etc
Ford Automobile Agency	551102	Auto & Home Supply Stores		
Franz Construction Inc	152103	General Contractors	138905	Oil Field Service
Frontier Heating Refrig & Ac	171117	Air Conditioning Contractors & Systems	171102	Heating Contractors
Fulkerson Funeral Home	726103	Funeral Directors	726105	Funeral Plans (Pre-Arranged)
Gartner & Denowh Angus Ranch	029101	Ranches		
Gem City Motor Co	753201	Automobile Body-Repairing & Painting		

APPENDIX A - Listing of Potential Contaminant Sources based on SIC Code

BUSINESS NAME	SIC CODE 1	SIC CODE NAME	SIC CODE 2	SIC CODE NAME
Gem City Motor Co	551103	Auto & Home Supply Stores	553111	Automobile Parts & Supplies-Retail-New
Goodyear-Lee's Tire & Svc Ctr	553123	Tire-Dealers-Retail		
Hedahls Auto Parts	553111	Automobile Parts & Supplies-Retail-New	359903	Machine Shops
Horse Creek School	821103	Schools		
Hot Wheels	799901	Skating Rinks		
Hovde Veterinary Clinic	074201	Veterinarians		
Hovde Veterinary Clinic	074201	Veterinarians	508746	Veterinarians Equipment & Supls (Whol)
Intrepid Usa Healthcare Svc	808201	Home Health Service	599920	Home Health & Health Care Equipment
J B Sprinklers	526136	Mobile Home Dealers		
Job Information	738959	Information & Referral Svcs		
Jock Stop	594113	Sporting Goods-Retail		
Joe Berzel Inc	029101	Ranches		
Jones Construction Svc Inc	179407	Special Trade Contractors Nec		
Judy's Catering	581212	Caterers	599940	Wedding Supplies & Services
K B Oil Svc Station	554101	Service Stations-Gasoline & Oil		
Kalberer's Heating Inc	171102	Heating Contractors		
Ken's Heating & Sheet Metal	171102	Heating Contractors		
Kleen Auto Detailing	754203	Automobile Detail & Clean-Up Service		
Kringen Construction	152103	General Contractors	154210	Buildings-Metal
Kritterz Too	599930	Pet Shops		
Land O'lakes Dairy	202498	Canned Specialties	024101	Dairies
Larson Motor Co	552101	Auto & Home Supply Stores	753201	Automobile Body-Repairing & Painting
Lazer Truck-N-Car	753801	Automobile Repairing & Service		
Leland Red Angus Ranch	029101	Ranches		
Liberty Christian School	821103	Schools		
Lower Yellowstone Electric	491101	Refuse Systems	839998	Labor Unions & Similar Organizations
Lower Yellowstone Irrigation	497102	Irrigation Companies		
Lower Yellowstone Project Ofc	497102	Irrigation Companies		
M & R Cycles	506316	Generators-Electric (Wholesale)	526109	Lawn Mowers
Mac Grady Trucking	421307	Trucking-Heavy Hauling		
Mc Kenzie Electric Cooperative	491101	Refuse Systems		
Meadow Gold Dairies	024101	Dairies		
Mini Mart	541103	Convenience Stores		
Mondak Auto Sales	551103	Auto & Home Supply Stores		
Mondak Ford Inc	551102	Auto & Home Supply Stores		
Napa Auto Parts	553111	Automobile Parts & Supplies-Retail-New		
Niehenke Welding Inc	769203	Welding		
Norby Repair	769999	Motion Picture & Tape Distribution		
Nortana Grain Co	422101	Grain Elevators		
North Star Auto Body	753201	Automobile Body-Repairing & Painting		
North Star Auto Body & Glass	753201	Automobile Body-Repairing & Painting	523110	Glass-Auto Plate & Window & Etc
Northern Cattle Co Inc	075102	Animal Specialty Svcs-Except Veterinary		#N/A
Northstar Auto Body & Glass	753201	Automobile Body-Repairing & Painting	523110	Glass-Auto Plate & Window & Etc
Oakland & Fisher Construction	152103	General Contractors		#N/A
Olson Plumbing	171105	Plumbing Contractors	171102	Heating Contractors
Pacific Steel & Recycling	505106	Steel-Distributors & Warehouses	505107	Pipe (Wholesale)
Paws Point	075211	Pet Boarding	075204	Pet Washing & Grooming
Prairie Winds Trading Co	599969	Art Galleries & Dealers		
Prewitt & Co	515401	Livestock Buyers		

APPENDIX A - Listing of Potential Contaminant Sources - Continued

BUSINESS NAME	SIC CODE 1	SIC CODE NAME	SIC CODE 2	SIC CODE NAME
Pro-Tec Storage	422503	Storage-Household & Commercial		
Quad R Repair	753801	Automobile Repairing & Service		
R & J Ag Supplies	519112	Feed-Dealers (Wholesale)		
Rau Elementary School	821103	Schools		
Real Trucking	421314	Oil Field Hauling		
Red Hot Fire Extinguisher	509903	Fire Extinguishers (Wholesale)	506315	Fire Protection Equipment & Supls (Whol)
Redline Audio & Cellular	553114	Automobile Radio & Stereo Systs-Sls/Svc	481207	Refuse Systems
Reynolds Warehouse Grocery	541105	Grocers-Retail		
Richland Aviation	735939	Aircraft Charter Rental & Leasing Svc	072103	Aerial Applicators
Richland County Clerk	911103	Legislative Bodies		
Richland County Clerk Court	911103	Legislative Bodies		
Richland County School Supt	821103	Schools		
Richland Pump & Supply	508429	Oil Field Supplies (Wholesale)		
Richland Upholstery	764109	Upholsterers	753207	Automotive Glass Replacement Shops
Rocken' R Auto Sales	551103	Auto & Home Supply Stores		
S & G Printing	275202	Printers		
Schwartz Photography	722101	Photographers-Portrait	733501	Photographers-Commercial
Seven S Ranch Supply	519108	Animal Health Products (Wholesale)		
Sharp Drilling	178103	Special Trade Contractors Nec	508444	Pumps (Wholesale)
Shell Oil Co	769203	Welding		
Sidney Air Svc	072103	Aerial Applicators		
Sidney Carburetor & Electric	753801	Automobile Repairing & Service	553105	Alternators & Generators-Automotive
Sidney City Fire Marshall	922404	Public Order & Safety Nec		
Sidney City Hall	911104	Legislative Bodies		
Sidney City Shops	495307	Sanitation Services	912104	General Government Nec
Sidney County Market	541105	Grocers-Retail		
Sidney Feed Lot	021101	Beef Cattle-Except Feedlots		
Sidney Grain Co	422101	Grain Elevators		
Sidney Gymnastics Club	799936	Gymnastic Instruction		
Sidney Health Ctr	806202	Hospitals	801101	Physicians & Surgeons
Sidney Health Ctr Audiology	804912	Audiologists	599979	Hearing Aids
Sidney Herald-Leader	271101	Books-Publishing & Printing		
Sidney High School	821103	Schools		
Sidney Livestock Market Ctr	515402	Livestock Auction Markets		
Sidney Middle School	821103	Schools		
Sidney Motor Rewind	506333	Electric Motors-Dlrs/Repairing (Whol)	506316	Generators-Electric (Wholesale)
Sidney Richland Airport	458106	Airports		
Sidney School Adm	821103	Schools		
Sidney Service Ctr	753901	Automobile Radiator Repairing	554101	Service Stations-Gasoline & Oil
Silk Rose Gallery	599969	Art Galleries & Dealers		
Spf/Exxon	554101	Service Stations-Gasoline & Oil	541103	Convenience Stores
Squaw Gap School	821103	Schools		
Stevenson Machine	359903	Machine Shops	359998	Indstrl/Coml Machinery/Equip Nec (Mfrs)
Stevenson School	821103	Schools		
Sunrise Auto Svc & Detailing	754203	Automobile Detail & Clean-Up Service		
Sunrise Equipment	508310	Farm Equipment (Wholesale)	508304	Tractor-Dealers (Wholesale)
Sweley Oil Inc	517210	Gasoline & Oil-Wholesale	517206	Oils-Fuel (Wholesale)
Tesoro Petroleum Inc	421304	Trucking	421306	Trucking-Liquid & Dry Bulk
Thiel Brothers Roofing Inc	176109	Special Trade Contractors Nec	152103	General Contractors
Thogersen Oil Co	554101	Service Stations-Gasoline & Oil		
Tibbits Mechanical Svc	359903	Machine Shops	359998	Indstrl/Coml Machinery/Equip Nec (Mfrs)
Tpd Enterprises	769967	Motorcycles & Motor Scooters-Rpr & Svc		
Transporation Maintenance Shop	478977	Refuse Systems		
Transystems Inc	421304	Trucking		
Tri-County Implement Inc	508310	Farm Equipment (Wholesale)		
Truck Suppliers Inc	753812	Truck-Repairing & Service	508525	Bearings (Wholesale)
U-Haul Co	751303	Truck Renting & Leasing	735934	Moving Supplies & Equipment-Renting
United Agri Products Co	287301	Fertilizers-Mixing Only	519112	Feed-Dealers (Wholesale)
Valley Heating & Cooling	171102	Heating Contractors	171103	Sheet Metal Work Contractors
Valley Motor Supply Co	553111	Automobile Parts & Supplies-Retail-New		
Valley View	027999	Animal Specialties Nec		
West Side School	821103	Schools		
Western Mini-Storage	422503	Storage-Household & Commercial		
Western Tire Co	553123	Tire-Dealers-Retail	753903	Wheel Alignment-Frame & Axle Svc-Auto
Wheeling Free Enterprise	769203	Welding		
Yellowstone Auto Glass	523110	Glass-Auto Plate & Window & Etc	753201	Automobile Body-Repairing & Painting
York Plumbing & Heating Inc	171105	Plumbing Contractors		

APPENDIX A - Listing of Potential Contaminant Sources – Continued

APPENDIX B - DEQ PWS's Database Output

Water Quality Sampling Results – Sidney PWS

PWS ID NUMBER	WATER_TYPE_CODE	SOURCE NAME	ANALYTE NAME	CONCENTRATION	UNITS	SAMPLE DATE
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		3/23/1989
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		3/23/1989
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		2/27/1991
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		2/27/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		7/20/1993
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		10/26/1993
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		10/26/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		2/8/1994
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		2/8/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		5/9/1994
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		6/17/1996
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		11/18/1997
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		11/18/1997
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		11/16/1998
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		11/16/1998
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0		10/28/1999
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0		10/28/1999
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	1,1,1-TRICHLOROETHANE	0	MG/L	9/17/2002
MT0000330	GW	WELL 5	1,1,1-TRICHLOROETHANE	0	MG/L	9/17/2002
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ANTIMONY	0		7/20/1993
MT0000330	GW	WELL 5	ANTIMONY	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ANTIMONY	0		6/17/1996
MT0000330	GW	WELL 5	ANTIMONY	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ANTIMONY	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	ANTIMONY	0	MG/L	9/19/2001
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0.001	MG/L	10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0		9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0.002	MG/L	3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0.001	MG/L	6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0		6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	ARSENIC	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ARSENIC	0		7/20/1993
MT0000330	GW	WELL 5	ARSENIC	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ARSENIC	0		6/17/1996
MT0000330	GW	WELL 5	ARSENIC	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	ARSENIC	0		9/19/2001
MT0000330	GW	WELL 5	ARSENIC	0		9/19/2001
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0.2	MG/L	10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0		9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0		3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0.02	MG/L	6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0.02	MG/L	6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	BARIUM	0.021	MG/L	7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BARIUM	0.02	MG/L	7/20/1993
MT0000330	GW	WELL 5	BARIUM	0.05	MG/L	7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BARIUM	0		6/17/1996
MT0000330	GW	WELL 5	BARIUM	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BARIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	BARIUM	0	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BERYLLIUM	0		7/20/1993
MT0000330	GW	WELL 5	BERYLLIUM	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BERYLLIUM	0		6/17/1996
MT0000330	GW	WELL 5	BERYLLIUM	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	BERYLLIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	BERYLLIUM	0	MG/L	9/19/2001
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	CADMIUM	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CADMIUM	0		7/20/1993
MT0000330	GW	WELL 5	CADMIUM	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CADMIUM	0		6/17/1996
MT0000330	GW	WELL 5	CADMIUM	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CADMIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	CADMIUM	0	MG/L	9/19/2001
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0		10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0.005	MG/L	9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0.01	MG/L	3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0		6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0		6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	CHROMIUM	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CHROMIUM	0		7/20/1993
MT0000330	GW	WELL 5	CHROMIUM	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CHROMIUM	0		6/17/1996
MT0000330	GW	WELL 5	CHROMIUM	0.03	MG/L	6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	CHROMIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	CHROMIUM	0	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		7/20/1993
MT0000330	GW	WELL 5	DINOSEB	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		10/26/1993
MT0000330	GW	WELL 5	DINOSEB	0		10/26/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		2/8/1994
MT0000330	GW	WELL 5	DINOSEB	0		2/8/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		6/13/1994
MT0000330	GW	WELL 5	DINOSEB	0		6/13/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		6/17/1996
MT0000330	GW	WELL 5	DINOSEB	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0		10/28/1999
MT0000330	GW	WELL 5	DINOSEB	0		10/28/1999
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	DINOSEB	0	MG/L	9/17/2002
MT0000330	GW	WELL 5	DINOSEB	0	MG/L	9/17/2002
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.2	MG/L	10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.14	MG/L	9/19/1979

Water Quality Sampling Results – Continued

PWS ID NUMBER	WATER_TYPE_CODE	SOURCE NAME	ANALYTE NAME	CONCENTRATION	UNITS	SAMPLE DATE
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.15	MG/L	3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.17	MG/L	6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.15	MG/L	6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	FLUORIDE	0.15	MG/L	7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	FLUORIDE	0.19	MG/L	7/20/1993
MT0000330	GW	WELL 5	FLUORIDE	0.19	MG/L	7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	FLUORIDE	0.15	MG/L	6/17/1996
MT0000330	GW	WELL 5	FLUORIDE	0.16	MG/L	6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	FLUORIDE	0.15	MG/L	9/19/2001
MT0000330	GW	WELL 5	FLUORIDE	0.2	MG/L	9/19/2001
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	MERCURY	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	MERCURY	0		7/20/1993
MT0000330	GW	WELL 5	MERCURY	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	MERCURY	0		6/17/1996
MT0000330	GW	WELL 5	MERCURY	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	MERCURY	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	MERCURY	0	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NICKEL	0		7/20/1993
MT0000330	GW	WELL 5	NICKEL	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NICKEL	0		6/17/1996
MT0000330	GW	WELL 5	NICKEL	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NICKEL	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	NICKEL	0	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE (AS N)	0		5/9/1994
MT0000330	GW	WELL 5	NITRATE (AS N)	2.8	MG/L	5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE (AS N)	0		6/17/1996
MT0000330	GW	WELL 5	NITRATE (AS N)	1.9	MG/L	6/17/1996
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0.05	MG/L	10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0.33	MG/L	9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0.17	MG/L	3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0.02	MG/L	6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0.08	MG/L	6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	NITRATE+NITRITE (AS N)	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		7/20/1993
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	2.8	MG/L	7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		5/9/1994
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	2.8	MG/L	5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		8/17/1995
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	5.8	MG/L	8/17/1995
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	3.2	MG/L	10/11/1995
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		6/17/1996
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	1.9	MG/L	6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		11/18/1997
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	2.1	MG/L	11/18/1997
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0.1	MG/L	11/16/1998
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	3.02	MG/L	11/16/1998
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0.05	MG/L	10/28/1999
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	2.24	MG/L	10/28/1999
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0.3	MG/L	12/4/2000
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	1.56	MG/L	12/4/2000
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0		9/19/2001
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	2.67	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	NITRATE+NITRITE (AS N)	0.1	MG/L	10/21/2002
MT0000330	GW	WELL 5	NITRATE+NITRITE (AS N)	3.66	MG/L	10/22/2002
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		7/20/1993
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		10/26/1993
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		10/26/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		2/8/1994
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		2/8/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		5/9/1994
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		6/17/1996
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0		10/28/1999
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0		10/28/1999
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	OXAMYL (VYDATE)	0	MG/L	9/17/2002
MT0000330	GW	WELL 5	OXAMYL (VYDATE)	0	MG/L	9/17/2002
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0		7/20/1993
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0		7/20/1993
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0		10/26/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0		11/16/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0		2/8/1994
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0		2/8/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0		5/9/1994
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0		5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0		9/15/1998
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0		9/15/1998
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	POLYCHLORINATED BIPHENYLS (PCB)	0	MG/L	9/17/2002
MT0000330	GW	WELL 5	POLYCHLORINATED BIPHENYLS (PCB)	0	MG/L	9/17/2002
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		10/4/1976
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		9/19/1979
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		3/18/1982
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		6/18/1985
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		6/24/1988
MT0000330	GW	DISTRIBUTION SYSTEM	SELENIUM	0		7/10/1991
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SELENIUM	0		7/20/1993
MT0000330	GW	WELL 5	SELENIUM	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SELENIUM	0		6/17/1996
MT0000330	GW	WELL 5	SELENIUM	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SELENIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	SELENIUM	0	MG/L	9/19/2001
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		7/20/1993
MT0000330	GW	WELL 5	SIMAZINE	0		7/20/1993
MT0000330	GW	WELL 5	SIMAZINE	0		10/26/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		11/16/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		2/8/1994
MT0000330	GW	WELL 5	SIMAZINE	0		2/8/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		5/9/1994
MT0000330	GW	WELL 5	SIMAZINE	0		5/9/1994
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		6/17/1996
MT0000330	GW	WELL 5	SIMAZINE	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0		10/28/1999
MT0000330	GW	WELL 5	SIMAZINE	0		10/28/1999
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	SIMAZINE	0	MG/L	9/17/2002
MT0000330	GW	WELL 5	SIMAZINE	0	MG/L	9/17/2002
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	THALLIUM	0		7/20/1993
MT0000330	GW	WELL 5	THALLIUM	0		7/20/1993
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	THALLIUM	0		6/17/1996
MT0000330	GW	WELL 5	THALLIUM	0		6/17/1996
MT0000330	GW	TP FOR WELLS 7 8 9 10 11	THALLIUM	0	MG/L	9/19/2001
MT0000330	GW	WELL 5	THALLIUM	0	MG/L	9/19/2001

Bacteriological Sampling Data - Sidney PWS

PWS ID NUMBER	COLLECTION DATE	SAMPLE TYPE	PRESENCE / ABSENCE CODE	ANALYTE CODE	ANALYTE NAME
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/3/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/14/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/10/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2003	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/21/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/19/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/9/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/16/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/16/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/16/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/16/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/16/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/5/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/10/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/8/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)

Bacteriological Sampling Data - Continued

PWS ID NUMBER	COLLECTION DATE	SAMPLE TYPE	PRESENCE / ABSENCE CODE	ANALYTE CODE	ANALYTE NAME
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/4/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/2002	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/22/2001	RP	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/22/2001	RP	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/22/2001	RP	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/22/2001	RP	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/15/2001	RT	A	3013	COLIFORM, FECAL
MT0000330	10/15/2001	RT	P	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/24/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/12/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/11/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/8/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/3/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/22/2001	SP	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/19/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/13/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/16/2001	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)

Bacteriological Sampling Data - Continued

PWS ID NUMBER	COLLECTION DATE	SAMPLE TYPE	PRESENCE / ABSENCE CODE	ANALYTE CODE	ANALYTE NAME
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/14/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/12/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/20/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/16/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/13/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/8/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/10/2000	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/15/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/18/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/12/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)

Bacteriological Sampling Data - Continued

PWS ID NUMBER	COLLECTION DATE	SAMPLE TYPE	PRESENCE / ABSENCE CODE	ANALYTE CODE	ANALYTE NAME
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/23/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/9/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/10/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/8/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/11/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/7/1999	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	12/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	11/17/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	10/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	9/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	8/10/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	7/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	6/8/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/29/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	5/5/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	4/7/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	3/11/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	2/3/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)
MT0000330	1/6/1998	RT	A	3100	COLIFORM, TOTAL (TCR)

APPENDIX C - Petroleum Release Data For the Sidney Area (For sites NOT shown in Figure 3)

City	SiteName	Location	AltEventID	Date	Confirmed Release Date	Active Tank
Sidney	Agri Basics	905 E Main	4201310*977	16-Dec-88	16-Dec-88	Yes
Sidney	Anchor Drilling Fluids	East Industrial Park	4211546*2787	25-May-94	25-May-94	No
Sidney	Anchor Drilling Fluids	East Industrial Park	4211546*3163	13-May-97	13-May-97	No
Sidney	BJ Services Co USA	Power Plant Road	4201869*2722	15-Sep-95	15-Sep-95	No
Sidney	Blue Rock Products Company	501 9th Ave NE	4200825*1141	10-Apr-92	10-Apr-92	Yes
Sidney	Buxbaum, Richard	Skaar Rt Box 4015	4204826*540	27-Dec-90	27-Dec-90	No
Sidney	Cenex Harvest States Bulk Plant	1281 S Central	4213655*3671	17-Feb-99	17-Feb-99	Yes
Sidney	Cenex Supply	1281 So Central Ave	4203364*2453	15-Nov-94	15-Nov-94	No
Sidney	Central Service	202 S Central Ave	4204166*3042	23-Oct-96	23-Oct-96	No
Sidney	Central Service	202 S Central Ave	4204166*765	10-Nov-87	10-Nov-87	No
Sidney	Community Service Building	221 5th St SW	4212364*4071	11-Sep-01	10-Sep-01	Yes
Sidney	Cross Petroleum Service	901 3rd St NE	4202184*4117	11-Jun-02	11-Jun-02	Yes
Sidney	Dige, Arnold		4202987*543	30-May-90	30-May-90	No
Sidney	Dynneson, John K.	Girard Route Box 5220	4212552*1053	25-Oct-91	25-Oct-91	No
Sidney	Hi-Line Trucking, Inc	Hwy 16	4206945*3523	15-Sep-98	15-Sep-98	Yes
Sidney	K-B Oil Inc	Bn Rt E Box 1308	4203220*2629	11-Jul-95	10-Jul-95	No
Sidney	KB Service	820 S Central Ave	4203219*1165	27-Apr-92	27-Apr-92	No
Sidney	Kemmis, Eldon F.	714 W Holly	4204827*2232	29-Jun-94	29-Jun-94	No
Sidney	Larson, Hazel V. French	RR 2 Box 2392	4200818*933	01-Oct-91	01-Oct-91	No
Sidney	Lazer Car Service/Bob Harris	323 S Central	4209811*155	20-Oct-89	25-Sep-89	No
Sidney	L-C Anvik, Inc.	Rte 1 Box 3638	4200262*2219	26-May-94	26-May-94	No
Sidney	Lower Yellowstone Rural Electric	Hwy 16 NW	4200001*1910	21-Oct-93	21-Oct-93	No
Sidney	MDOT Maintenance Shop	Mt 1l NW of Sidney	4202610*1706	16-Jun-93	16-Jun-93	No
Sidney	Niehenke Welding Inc	312 N Central	4202733*832	29-Jul-91	27-Jul-91	No
Sidney	Pennant Development Co.	25th Ave. NW	4201078*1383	19-Sep-92	19-Sep-92	No
Sidney	Rambur Charolais Ltd	Rt 1 Box 3418	4207913*3534	02-Oct-98	02-Oct-98	Yes
Sidney	Richland County	202 N Central	4200027*990	01-Nov-91	01-Nov-91	No
Sidney	Rupp, Wilbur	Route 1, Box 3035	4206772*693	12-Apr-91	12-Apr-91	No
Sidney	Sidney Health Center	216 14th Ave SW	4206159*3255	07-Oct-97	07-Oct-97	No
Sidney	Sidney Oil Company	Hc 57 Box 4055	4201287*2469	05-Dec-94	05-Dec-94	Yes
Sidney	Sweley Oil Inc	3rd St & 10th Ave N	4200183*3401	14-Apr-98	14-Apr-98	Yes
Sidney	Sweley Oil Inc (Herbert's Exxon)	222 S Central Ave	4204135*3560	16-Oct-98	19-Oct-98	Yes
Sidney	Thogersen Oil	625 S Central Ave	4203224*805	12-Jun-91	12-Jun-91	Yes
Sidney	Tofte Oil, Inc.	Railway Ave	4212429*3944	13-Jul-00	13-Jul-00	Yes
Sidney	Victor H Lorenz	Rte 1 Box 3075	4211073*1763	29-Jul-93	29-Jul-93	Yes
Sidney	Watts, George	Hwy 16 So. of Sidney	4200608*1201	18-May-92	15-May-92	No
Sidney	Williston Sidney Transfer Inc.	813 2nd St NE	4206456*2762	25-Sep-95	25-Sep-95	Yes

APPENDIX D - Sanitary Survey

APPENDIX E - Concurrence Letter & Other Correspondence